

**REMARKS**

Applicant respectfully requests reconsideration. Claims 1-27, 29-41 and 43-46 were previously pending in this application. Claims 1, 2, 29, 32, 39-41 and 47 have been amended. Claim 18 has been deleted. New claim 47 has been added.

Claim 1 has been amended to recite that the method consists essentially of adding to the fuel, prior to the introduction of the fuel to a vehicle, cerium oxide and/or doped cerium oxide in combination with detergent, wherein the detergent improves the efficiency of the fuel by improving the stability of the cerium oxide and/or doped cerium oxide in the fuel. Basis for the amendment is found in the specification as filed, for example at page 5, lines 28-29. Similarly, claim 29 has also been amended to recite that the detergent in the fuel additive improves the stability of the cerium oxide and/or doped cerium oxide in the fuel additive. Clarifying amendments have been made to claims 2, 32 and 39 to 41.

New claim 47 recites that the cerium oxide and/or doped cerium oxide is added to the fuel together with one or more fuel additives. Basis for the amendment is found in the specification as filed, for example at page 2, lines 15 to 19 of the present application.

As a result of the claim amendments, claims 1-17, 19-27, 29-41 and 43-47 are pending for examination. No new matter has been added.

**Rejections Under 35 U.S.C. § 103**

The Examiner rejected claims 1-27, 29-41 and 43-46 under 35 USC § 103(a) as being unpatentable over Wakefield (WO 03/040270 A2). Applicant respectfully requests reconsideration.

Although Wakefield teaches the incorporation of doped cerium oxide and detergent into fuel, Wakefield teaches the incorporation of doped cerium oxide and detergent separately. In contrast, claims 1 and 29 of the present application require a combination of both the cerium oxide and/or doped cerium oxide; and detergent, for improving the efficiency of the fuel by improving the stability of the cerium oxide in the fuel. A person of ordinary skill in the art referring to Wakefield would not arrive at the claimed invention of claims 1 and 29 because there is no reason provided in Wakefield to use detergent in combination with cerium oxide and/or doped cerium oxide for improving efficiency of the fuel.

On pages 3-4 of the Office Action, the Examiner stated that “Wakefield discloses on page 9 lines 10-30, the cerium oxide is added together with one or more of a detergents, dehazers, anti-foaming agents, ignition improvers, anti-rust agents, re-odorants, anti-oxidants, metal deactivators, or lubricity agents, meeting limitation of claims 17-18, 25, 39-40.” While Applicant acknowledges that Wakefield discloses the categories of agents listed by the Examiner, Applicant respectfully disagrees that Wakefield discloses that cerium oxide is “added together with one or more” of these agents. Wakefield makes no such disclosure and the Examiner fails to identify such a disclosure in Wakefield. Further, no such disclosure can be inferred from the listing of agents in Wakefield.

A person of ordinary skill in the art referring to Wakefield would consider detergents as a conventional additive (see page 9, lines 3-4 and lines 10-11) since a person skilled in the art at the date of the present invention would understand that a detergent used in a diesel fuel is for preventing the formation of deposits on the injector nozzle partly by providing a film on the metal surface and partly by forming a protective coating around the developing deposit precursors.

Applicant submits herewith to the Examiner an extract from “Fuel Additives and the Environment”, dated 1994. This document is based on the work of a special task force of the ATC (the Technical Committee of Petroleum Additive Manufacturers of Europe), and as such is considered to be a standard work by the person skilled in the art. Section 5.2.1(c) describes detergents when used in diesel fuel, which are described as “predominantly succinimide and other

ashless polymeric products" (see page 19, left column, lines 9-11). As explained above, there is no guidance in Wakefield which would lead a person skilled in the art to use detergents in combination with cerium oxide and/or doped cerium oxide specifically to improve efficiency of the fuel. In fact, Wakefield mentions organo platinum group metal compounds being present as co-catalysts. However, there is no mention in Wakefield of the use of detergent in combination with the cerium oxide and/or doped cerium oxide for improving the efficiency of the fuel. In the present invention, the detergent stabilizes the cerium oxide particles in the fuel and thereby contributes to efficiency improvement by maintaining maximum amounts of cerium oxide particles in the fuel.

On page 5 of the Office Action, the Examiner stated that "The present invention does not disclose a reaction process between the cerium oxide and the detergent; therefore it is obvious the combination of cerium oxide, detergents, and other additives would improve a fuel for an internal combustion engine, as taught by Wakefield." Applicant respectfully disagrees that the Examiner's conclusion of obviousness can be drawn based on the lack of a disclosure of the noted reaction process. Applicant further submits that, even though the present invention does not disclose a reaction process between the cerium oxide and the detergent, it should be noted that Wakefield does not provide any reason for a person skilled in the art to use cerium oxide in combination with detergent for improving fuel efficiency. Therefore, it follows that the person skilled in the art would not have a reasonable expectation of success in making the invention as it is claimed. Such a reasonable expectation of success is required for the finding of obviousness. MPEP 2143.02.

In addition to the above, Applicant submits that MPEP 2143.03 requires the consideration of every claim feature in an obviousness determination (citing In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). Therefore, to render claims 1 and 29 unpatentable based on Wakefield, the Examiner must show that Wakefield teaches or suggests each and every claim feature expressly or inherently, including the feature that the detergent improves the efficiency of the fuel by improving the stability of the cerium oxide and/or doped cerium oxide in the fuel as is recited in the claims.

Lastly, Applicant respectfully notes that the Supreme Court in KSR Int'l v. Teleflex Inc. stated that “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” KSR Int'l v. Teleflex Inc., 127 S. Ct. 1727, 1741, 550 U.S. \_\_\_, \_\_\_, 82 USPQ2d 1385, 1396 (2007) (*quoting In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)). Applicant submits that the Examiner has not provided articulated reasoning that accounts for the differences between the claimed invention and the prior art. Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966); KSR, 550 U.S. at \_\_\_, 82 USPQ2d at 1391 (2007). Accordingly, the Examiner has not met the burden required for making a *prima facie* case of obviousness.

Therefore, claims 1 and 29, and their dependent claims are indeed patentable over Wakefield. Accordingly, Applicant respectfully requests withdrawal of the rejection made under 35 USC § 103(a).

**CONCLUSION**

In view of the foregoing, the present application is believed to be in condition for allowance. A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the application in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, any necessary extension of time is hereby requested. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. M0106.70021US00.

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Respectfully submitted,

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